

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 16

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte MARK H. HELMICK

Appeal No. 1997-4444
Application 08/427,884¹

ON BRIEF

Before URYNOWICZ, JERRY SMITH, and BARRETT, Administrative Patent Judges.

BARRETT, Administrative Patent Judge.

DECISION ON APPEAL

¹ Application for patent filed April 26, 1995, entitled "Automated Precision Cassette Handling System."

Appeal No. 1997-4444
Application 08/427,884

This is a decision on appeal under 35 U.S.C. § 134 from the final rejection of claims 1 and 4-28. The amendments after final have not been entered (Examiner's Answer, page 2).

We affirm-in-part.

BACKGROUND

The disclosed invention is directed to a precision cassette handling system and method having a reference surface which accurately positions a cassette on the reference surface before it is inserted into a tape drive unit or a storage cell. This eliminates the uncertainty in the position of the cassette after it is withdrawn from a tape drive unit or storage cell. When the cassette is withdrawn from a tape drive or storage cell by mechanical couplers, the couplers release the cassette onto the reference surface and immediately re-engage the cassette.

Claim 4 is reproduced below.

4. A cassette handling system, comprising:

at least two ports in which a cassette is receivable, one of said ports being occupied by the cassette, one of said ports being vacant;

a movable carrier assembly for transporting the cassette from said occupied port to said vacant port, said carrier assembly including an engaging assembly for

Appeal No. 1997-4444
Application 08/427,884

extracting the cassette from said occupied port and
inserting the cassette into said vacant port; and

a reference mechanical structure defining a
reference position from which the cassette is insertable
into said vacant port, said reference mechanical
structure being fixed to said movable carrier assembly;

said engaging assembly repositioning the cassette to
said reference position defined by said reference
mechanical structure prior to inserting the cassette into
said vacant port.

The Examiner relies on the following prior art:

1987	Rudy et al. (Rudy)	4,685,095	August 4,
1990	Verhagen	4,922,478	May 1,
1991	Tomita	5,036,503	July 30,
1992	Satoh et al. (Satoh)	5,146,375	September 8,
4, 1994	Elliott et al. (Elliott)	5,353,179	October
1995	Yamakawa et al. (Yamakawa)	5,402,283	March 28,
1993	Uchiumi ²	5-314613	November 26,
	(Japanese Kokai Patent Application)		

Claims 1, 13-18, and 28 stand rejected under 35 U.S.C.
§ 112, second paragraph, as being indefinite for failing to

² A translation of Uchiumi accompanies this decision.

Appeal No. 1997-4444
Application 08/427,884

particularly point out and distinctly claim the subject matter which applicant regards as his invention.

Claims 1, 4-8, 12, 13, and 21-26 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Yamakawa.

Claims 21, 22, and 24 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Satoh.

Claim 9 stands rejected under 35 U.S.C. § 103 as being unpatentable over Yamakawa as applied to claim 7, further in view of Uchiumi.

Claim 10 stands rejected under 35 U.S.C. § 103 as being unpatentable over Yamakawa in view of Uchiumi as applied to claim 9, further in view of Tomita.

Claim 11 stands rejected under 35 U.S.C. § 103 as being unpatentable over Yamakawa as applied to claim 7, further in view of Rudy.

Claim 14 stands rejected under 35 U.S.C. § 103 as being unpatentable over Yamakawa as applied to claim 4, further in view of Elliott.

Claims 15-18 stand rejected under 35 U.S.C. § 103 as being unpatentable over Yamakawa in view of Elliott as applied to claim 14, further in view of Verhagen.

Appeal No. 1997-4444
Application 08/427,884

Claims 19 and 20 stand rejected under 35 U.S.C. § 103 as being unpatentable over Yamakawa in view of Elliott as applied to claim 14, further in view of Uchiumi and Verhagen.

Claim 23 stands rejected under 35 U.S.C. § 103 as being unpatentable over Satoh as applied to claim 22, further in view of Yamakawa.

Claim 27 stands rejected under 35 U.S.C. § 103 as being unpatentable over Yamakawa.

Claim 28 stands rejected under 35 U.S.C. § 103 as being unpatentable over Yamakawa as applied to claim 27, further in view of Uchiumi, Tomita, and Elliott.

We refer to the Final Rejection (Paper No. 6) (pages referred to as "FR__") and the Examiner's Answer (Paper No. 15) (pages referred to as "EA__") for a statement of the Examiner's position and to the Appeal Brief (Paper No. 14) (pages referred to as "Br__"), filed February 11, 1997, for a statement of Appellant's arguments thereagainst.

OPINION

35 U.S.C. § 112, second paragraph

In the Final Rejection, the Examiner suggested changes to overcome the § 112, second paragraph, rejection. Appellant

Appeal No. 1997-4444
Application 08/427,884

submitted an amendment after final (Paper No. 9) on December 11, 1996, making the suggested modifications. In the Advisory Action (Paper No. 10), the Examiner refused to enter the amendment on the grounds that one of the grounds for rejection of claim 1 had not been overcome (although the Examiner had proposed no language to cure the alleged problem) even though entry of the amendment would have simplified the appeal by removing the other grounds for rejection from consideration. Appellant's brief does not address the § 112 rejection, apparently because Appellant believed the amendment after final would be entered. Since we consider the Examiner's refusal to enter the December 11, 1996, amendment unreasonable, we will address the merits of the rejection even though they have not been argued.

The Examiner states that in claim 1, "'said locating platen being fixed relative to said movable mechanical couplers' is misleading as it suggests that the 'platen' is moving with the couplers, being fixed with respect to them" (FR2).

In connection with the anticipation rejection, Appellant notes that "fixed" is defined by Webster's Seventh New

Appeal No. 1997-4444
Application 08/427,884

Collegiate Dictionary as "securely placed or fastened:

STATIONARY" and "not subject to change or fluctuation."

Appellant interprets "fixed" to mean "stationary" and, thus, would interpret the platen to be stationary with respect to the movable couplers. This interpretation is clearly supported when the phrase is read in light of the specification. Moreover, the phrase contrasts "fixed" and "movable" which implies that "fixed" means stationary. The phrase is not misleading. This reason for the rejection of claim 1 is reversed.

The Examiner further states, with respect to claim 1, that "'said locating platen . . . defining an accurate position, said accurate position being free of vertical positioning errors of said cassette' is confusing, as the 'accurate position' appears to be a position of the plate, so that it is unclear how said position can be affected by positioning errors of the cassette; also it is unclear how an absolutely accurate positioning can be obtained, and which precision of positioning makes the position 'accurate'" (FR2-3).

Appeal No. 1997-4444
Application 08/427,884

The "accurate position" defines a reference position on the locating platen. The phrase "free of vertical positioning errors of said cassette" indicates that the "accurate position" is not affected by positioning errors of the cassette; it does not imply that it might somehow be affected by the cassette as noted by the Examiner. As to the term "accurate," such terms are relative and do not imply absolute precision. The locating platen surface defines an "accurate position" in the sense that all cassettes will be located at this same position, not at a location displaced from the optimum position relative to the carrier due to the tolerances when the cassette is removed from the tape drive unit or storage unit. While the language may not be perfect, it is considered definite to one of ordinary skill in the art. This reason for the rejection of claim 1 is reversed.

The Examiner states that "[i]n claim 13, it is unclear how the 'control unit' is 'coupled' to the 'carrier assembly' and 'computer system,' as 'coupled' could be read to imply that the three elements are simply sitting on the same table" (FR3).

Appeal No. 1997-4444
Application 08/427,884

Claim breadth should not be confused with indefiniteness. In re Miller, 441 F.2d 689, 693, 169 USPQ 597, 600 (CCPA 1971). The term "coupled" is broad, not indefinite. However, "coupled" is not broad enough to read on the elements being functionally unconnected because the control unit is claimed as controlling the carrier assembly and the engaging assembly. Appellant does not have to recite how the elements are coupled in any more detail unless it becomes necessary to define over prior art. The rejection of claim 13 is reversed.

The Examiner states that "[i]n claim 14, it is noted that the position of the 'threaded shaft' is not defined, so that the position and operation of the 'tensioning structure' of claim 15 and 'compression spring' of claim 16 are unclear" (FR3).

Again, this is a case of breadth, not indefiniteness. The fact that the position of the threaded shaft is not recited in claim 14 does not affect the definiteness of claims 15 and 16. Claim 15 recites that the tensioning structure is at one end of the shaft to apply axial force to the shaft which is a definite position and function. The same reasons apply to claim 16. The rejection of claim 14 is reversed.

The Examiner states that "[i]n claim 28, line 3, 'a threaded shaft mounted to said carrier below said opening' is confusing, as Fig. 2 shows shaft 28 extending 'above' and 'below' the carrier comprising the opening; also 'below' is unclear, as the orientation of the carrier assembly is not defined" (FR3).

Claim 26 defines that the carrier has a top surface and claim 27 recites that the carrier has an opening formed therethrough, the opening defining two spaced surfaces on the top surface of the carrier. The ordinary meaning of "top" is the highest point in the vertical direction. Therefore, "below said opening" in claim 28 refers to a position lower than the top surface. It is clear that the shaft being referred to is the threaded shaft 50 in Figure 3 which moves the base structure 40, not the threaded shaft 28 in Figure 1 as interpreted by the Examiner. The rejection of claim 28 is reversed.

Helmick declaration

Appellant's brief attaches a copy of the declaration of the inventor Mark H. Helmick (Paper No. 5½) received April 1, 1996; however, the declaration is not relied on in

Appeal No. 1997-4444
Application 08/427,884

the arguments. Arguments not made in the brief will normally not be considered. See 37 CFR §§ 1.192(a), 1.192(c)(8)(iii), and 1.192(c)(8)(iv). The content of the declaration is discussed in the Advisory Action (Paper No. 10). We add that the invention is defined by the claims, not the disclosed invention. Thus, differences between the disclosed invention and the references are of no significance to the patentability analysis. For example, a reference could have an extremely complicated gripping mechanism, but if the claims recite only a "gripping device," the limitation would be met by the reference. Although we do not specifically address the paragraphs of the Helmick declaration, we have fully considered the statements made therein in arriving at our patentability decision.

35 U.S.C. § 102

"Anticipation is established only when a single prior art reference discloses, expressly or under principles of inherency, each and every element of a claimed invention."

RCA Corp. v. Applied Digital Data Systems, Inc., 730 F.2d 1440, 1444, 221 USPQ 385, 388 (Fed. Cir. 1984).

Claim 1

Appellant argues that Yamakawa does not disclose "said locating platen being fixed relative to said movable mechanical couplers." Appellant notes that "fixed" is defined by Webster's Seventh New Collegiate Dictionary as "securely placed or fastened: STATIONARY" and "not subject to change or fluctuation." Appellant interprets "fixed" to mean "stationary."

The Examiner interprets "fixed relative to" to mean that the relationship between the platen and the couplers is fixed, i.e., that they move together as noted in the § 112, second paragraph, rejection. The Examiner states that the only fixed relationship is in the vertical direction and, thus, "'fixed' has been interpreted as 'fixed in a vertical direction'" (EA17).

In the context of claim 1, "fixed" with regard to the "movable mechanical couplers" indicates that "fixed" should be interpreted to mean that the platen is "stationary" and the mechanical couplers are "movable." Since we do not consider "fixed" to be misleading, as discussed with respect to the § 112, second paragraph, rejection of claim 1, we do not agree

with the Examiner that "fixed" should be interpreted as "fixed in a vertical direction." The tray 62 in Yamakawa corresponding to the claimed locating platen is not stationary with respect to the base 60 and the grip hand 25 which correspond to the mechanical coupler. Therefore, claim 1 is not anticipated. The rejection of claim 1 is reversed.

Claims 4-8, 12, and 13

Appellant argues that Yamakawa does not disclose a "reference mechanical structure being fixed to said movable carrier assembly," but rather teaches a slidably mounted tray 62.

The Examiner states (EA18): "It is respectfully noted that 'to fix' has the meanings 'to fasten' or 'to attach' (Webster II, 1994). Yamakawa et al's reference structure 62 is attached to the carrier, as it moves with it and is part of it. Thus, it is maintained that Yamakawa et al anticipates claims 4-8 and 12-13."

We agree with the Examiner that "fixed" in the context of claim 4 is best interpreted as "securely placed or fastened to." The language "fixed to" does not preclude the reference mechanical structure from moving with respect to the carrier.

Appeal No. 1997-4444
Application 08/427,884

The tray 62 in Yamakawa which corresponds to the claimed "reference mechanical structure" is "fixed to" (attached to) the carrier. Thus, we find claim 4 to be anticipated by Yamakawa. The rejection of claims 4-8, 12, and 13 is sustained.

Claims 21-24

Appellant notes that the accessor 20 of Yamakawa requires a different insertion sequence for a tape drive unit versus for a cell and a different extraction sequence for a tape drive unit versus for a cell. Appellant argues that claim 21 requires the extracting step and the inserting step to be the same regardless of whether the occupied or vacant unit is a storage unit or a tape drive unit.

The Examiner states (EA18): "The open language of the claims does not exclude the existence of other steps; also, the details of the steps are not claimed. Again, limitations in the specification cannot be read into the claims for the purpose of avoiding the prior art."

We agree with the Examiner that the claim language "without changing said steps (a) through (d) depending upon said occupied unit being either a tape drive unit or a storage

unit and said vacant unit being either a tape drive unit or a storage unit" in claim 21, step (e), does not define over Yamakawa. The step of "extracting a cassette from an occupied unit, said occupied unit being either a tape drive unit or a storage unit in which said cassette is received" requires only a broad step of "extracting." Although the details of Yamakawa's extracting step vary depending on whether it is from the cell (Figure 17) or the tape drive (Figure 18), the broad step of "extracting" is the same. Claim 21 does not preclude steps not recited in step (a) from being different. The same arguments can be made for the "inserting" step (d). Thus, we find claim 21 to be anticipated by Yamakawa. The rejection of claims 21-24 is sustained.

Claims 25 and 26

Appellant argues that Yamakawa does not disclose "said reference platen being fixed relative to said engaging assembly" as recited in claim 25.

The Examiner relies on the arguments for claim 1 (EA18).

For the reasons stated in the analysis of claim 1, we agree with Appellant that the limitation "said reference platen being fixed relative to said engaging assembly"

Appeal No. 1997-4444
Application 08/427,884

requires the platen to be stationary relative to a moving engaging assembly and that this is not disclosed by Yamakawa. The rejection of claims 25 and 26 is reversed.

Claims 21, 22, and 24

Appellant argues that "Sato et al. do not teach or suggest a method for moving a cassette in a cassette handling system in which a cassette is placed in a reference position as recited in claims 21, 22, and 24" (Br11).

The Examiner finds (EA18) that the position of the cassette inside Sato's carrier 20A satisfies the limitation of "placing said cassette in a reference position from which said cassette is insertable into the tape drive unit/units and the storage units."

We agree with the Examiner that the claimed "reference position" does not specify any special structure, property or function of the position. Thus, the position of the cassette in Sato could be called a "reference position." The rejection of claims 21, 22, and 24 over Sato is sustained.

35 U.S.C. § 103

Claim 9

Appellant argues that Uchiumi does not disclose a solenoid with an inner plunger positioned between a pair of couplers and that it would have been unobvious to locate the solenoid between the couplers in Yamakawa because there is no space.

The Examiner finds that Uchiumi discloses a solenoid-actuated coupler with the solenoid located outside the couplers and concludes that it would have been obvious to substitute it for the gear driven couplers in Yamakawa.

We agree that it would have been obvious to substitute other known types of coupler drive mechanisms, such as the solenoid-actuated coupler in Uchiumi, for the coupler drive in Yamakawa.

The Examiner further concludes that "[i]t would have been obvious to one of ordinary skill in the art, at the time the invention was made, to position the solenoid between the couplers instead that [sic] on a side as disclosed by Uchiumi by routine structure optimization" (EA9).

Uchiumi does not disclose the claimed arrangement of a solenoid positioned between the couplers. It appears that the only suggestion for locating the solenoid as claimed is found

Appeal No. 1997-4444
Application 08/427,884

in Appellant's disclosure. Therefore, the Examiner has failed to provide sufficient evidence to establish a prima facie case of obviousness. The rejection of claim 9 is reversed.

Claim 10

The additionally applied reference to Tomita does not cure the deficiencies of Yamakawa and Uchiumi. Therefore, the rejection of claim 10 is reversed.

Claim 11

Appellant argues that there is no motivation to provide a converging guide rail as taught by Rudy at Figure 9 and column 15, lines 33-54, into the apparatus of Yamakawa because Yamakawa inserts the tray 62 into a lower cell and raises it through a lower opening to raise the cartridge and, therefore, a converging guide rail would serve no function (Br13-14).

The Examiner finds that beveling is "old and well known in the art, as well [as] in a plurality of other arts, and its application certainly does not require the use of Rudy's 'converging guide rails' as Applicant appears to believe" (EA20).

We are not persuaded by the Examiner's response which does not address Appellant's argument. However, Yamakawa discloses that when a cartridge is removed from a tape drive, as opposed to from a cell as argued by Appellant, it must be pulled out over the front edge 62a of the tray 62 as shown in Figure 18. Therefore, a beveled edge would serve a function. Note that Yamakawa discloses that the cartridge has a beveled edge 35 which rides up over the front edge 62a of the tray 62 (Figure 18C). In our opinion, it would have been obvious to one of ordinary skill in the art to bevel the edge 62a of the tray 62 instead of the cartridge because it merely changes the location of the bevel from one part to another. In addition, Rudy discloses a beveled edge to "to facilitate the alignment of the cartridge 30 as it is retracted into the carriage 120" (col. 15, lines 33-34), which is evidence that one of ordinary skill in the art would have known to use a beveled edge to facilitate guiding the cassette. For these reasons, we sustain the rejection of claim 11.

Claim 14

Appellant argues (Br14): "In contrast to the cassette handling system of claim 14 in which only the drive collar

rotates, the entire carriage 35, arm 39, and hub 40 of Elliott et al. rotates about the shaft 41. Accordingly, neither Yamakawa et al. nor Elliott et al. teaches or suggests a cassette handling system in which a drive collar rotates about a threaded shaft to move a carrier assembly."

The Examiner finds that Elliott's hub 40 is a drive collar and concludes (EA11): "It would have been obvious to one of ordinary skill in the art at the time the invention was made to replace Yamakawa's pulley and belt system to raise and lower the carrier with a threaded shaft and rotatable drive collar as disclosed by Elliott, while maintaining the non-rotating carrier disclosed by Yamakawa by techniques well known in the art."

We agree with the Examiner that, as a general proposition, it would have been obvious to one of ordinary skill in the art to substitute known alternative drive systems for the belt and pulley system in Yamakawa. However, we fail to see how the Examiner proposes to modify Yamakawa's system to incorporate the rotatable hub 40 in Elliott "while maintaining the non-rotating carrier disclosed by Yamakawa" (EA11), without using Appellant's disclosure against him. The

Appeal No. 1997-4444
Application 08/427,884

rotatable hub 40 rotates the whole hub around the shaft, where the hub 40, arm 39 and carriage 35 move together as a unit to trace out a helical path. We find no suggestion to incorporate Elliott's drive system into Yamakawa's "while maintaining the non-rotating carrier disclosed by Yamakawa" (EA11). The Examiner has failed to provide sufficient evidence to establish a prima facie case of obviousness. The rejection of claim 14 is reversed.

Claims 15-18

The additionally applied Verhagen patent does not cure the deficiencies noted with Yamakawa and Elliott. Therefore, the rejection of claims 15-18 is reversed.

We further note, however, that we disagree with the Examiner's position that "Verhagen's spring 17 inherently applies axial force on the shaft and reduces vibration, as this is the purpose of Verhagen's invention" (EA21-22). The spring 17 in Verhagen supports the sub-frame 1 as part of a spring/damper arrangement and, even assuming the cylindrical spindle 15 is considered to be a shaft, it does not apply

axial force to the spindle. The spring does not apply axial force to the spindle to eliminate vibration and would not have suggested the claimed subject matter.

Claims 19 and 20

Claim 19 includes the feature of a drive collar mounted on a threaded shaft, which was addressed in the rejection of claim 14. Because we reversed the rejection of claim 14 we, likewise, reverse the rejection of claim 19 and its dependent claim 20.

Claim 19 also includes the feature of compression springs applying tension to the shaft so that a resonant frequency is greater than a frequency at which the drive collar rotates about the shaft. For the reasons stated in connection with claims 15-18, we find that Verhagen does not teach or suggest this structure or function. For this additional reason, the rejection of claim 19 and its dependent claim 20 is reversed.

Claim 23

Appellant argues that "Sato et al. in view of Yamakawa et al. does not teach placing a cassette on a reference platen

Appeal No. 1997-4444
Application 08/427,884

from which the cassette is inserted into a vacant unit"
(Br16).

The Examiner states that "Yamakawa et al explicitly discloses [sic] the process of releasing and regripping the cassette, as discussed in the anticipation rejection of claim 23 [sic, 21]" (EA22).

While Yamakawa does disclose "releasing said cassette from said pair of coupler arms onto a reference platen," as recited in claim 23, we fail to see how the Examiner proposes to modify Satoh to include such a feature. The system in Yamakawa is inconsistent with the system in Satoh. The Examiner has failed to establish a prima facie case of obviousness. The rejection of claim 23 is reversed.

Claim 27

The anticipation rejection of parent claim 25 has been reversed. The obviousness rationale does not provide any reasoning which would overcome the deficiencies of Yamakawa with respect to the rejection of claim 25. Accordingly, the rejection of claim 27 is reversed.

Claim 28

Appeal No. 1997-4444
Application 08/427,884

The patents to Uchiumi, Tomita, and Elliott do not overcome the deficiencies of Yamakawa with respect to the rejection of claim 25. Accordingly, the rejection of claim 28 is reversed.

CONCLUSION

The rejection of claims 1, 13-18, and 28 under 35 U.S.C. § 112, second paragraph, is reversed.

The rejection of claims 4-8, 12, 13, 21-24 under 35 U.S.C. § 102(e) over Yamakawa is sustained and the rejection of claims 1, 25, 26 under § 102(e) over Yamakawa is reversed.

The rejection of claims 21, 22, and 24 under 35 U.S.C. § 102(b) over Satoh is sustained.

The rejection of claim 11 under 35 U.S.C. § 103 is sustained and the rejections of claims 9, 10, 14-20, 23, 27, and 28 under § 103 are reversed.

Appeal No. 1997-4444
Application 08/427,884

No time period for taking any subsequent action in
connection with this appeal may be extended under 37 CFR
§ 1.136(a).

AFFIRMED-IN-PART

STANLEY M. URYNOWICZ, JR.)	
Administrative Patent Judge)	
)	
)	
)	BOARD OF PATENT
JERRY SMITH)	APPEALS
Administrative Patent Judge)	AND
)	INTERFERENCES
)	
)	
)	
LEE E. BARRETT)	
Administrative Patent Judge)	

Appeal No. 1997-4444
Application 08/427,884

POMS, SMITH, LANDE & SANDE
2029 Century Park East
38th Floor
Los Angeles, CA 90067-3026